

CLAIMS

1. A pharmaceutical laser drilling system for creating an opening in a coating on a dosage form having a first side and a second side, said system comprising:

- (a) a laser drilling station;
- (b) a laser capable of producing a laser beam, said laser beam being conducted through a laser beam delivery assembly capable of focusing said laser beam at said laser drilling station;
- (c) a first link conveyor comprising a plurality of first links, each of said first links being capable of receiving a dosage form;
- (d) a second link conveyor comprising a plurality of second links, each of said second links being capable of receiving said dosage form, said second link conveyor being operatively interconnected with said first link conveyor to receive said dosage form from said first link conveyor and capable of transporting said dosage form to said laser drilling station;
- (e) a first color sensor located adjacent said first link conveyor and capable of sensing the color of at least one of said first side and said second side of said dosage form and of generating a signal representative of the color; and
- (f) a rejection station located along said first link conveyor capable of ejecting said dosage form in response to said signal generated by said first color sensor.

2. The system of claim 1, further comprising a second color sensor located adjacent said second link conveyor and capable of sensing the color of at least one of said first side and said second side of said dosage form and generating another signal representative of the color.

3. The system of claim 2 wherein said first color sensor senses the color of said first side of said dosage form and said second color sensor senses the color of said second side of said dosage form.

4. The system of claim 2 wherein said second link conveyor further comprises a rejection station capable of ejecting said dosage form in response to said signal generated by said second color sensor.

5. The system of claim 1, further comprising a transfer mechanism capable of transporting said dosage form from said first link conveyor to said second link conveyor, and wherein said first link conveyor operates at a rate that is different than the rate at which said second link conveyor operates.

6. A pharmaceutical laser drilling system, comprising:

- (a) a laser drilling station;
- (b) a laser capable of producing a laser beam, said laser beam being conducted through a laser beam delivery assembly comprising a movable lens assembly and being capable of focusing said laser beam at said laser drilling station;
- (c) a dosage form handling assembly capable of transporting individual dosage forms to said laser drilling station; and
- (d) a debris removal assembly comprising a debris enclosure extending from said lens assembly to said dosage form handling assembly, said debris enclosure surrounding an end of said lens assembly during movement of said lens assembly toward and away from said dosage form handling assembly.

7. The system of claim 6, further comprising an inlet for a sweep gas in fluid communication with said debris enclosure.

8. The system of claim 7 wherein said debris enclosure is in fluid communication with an outlet, and said outlet receives both said sweep gas and debris produced during operation of said system.

9. The system of claim 6, further comprising a vacuum mechanism in fluid communication with said debris enclosure.

10. The system of claim 6 wherein said debris enclosure comprises a debris head that is in fluid communication with a source of vacuum, and that is in a fixed position relative to said dosage form handling assembly during movement of said lens assembly.

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11. A pharmaceutical laser drilling system, comprising:

(a) a laser drilling station;

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(b) a laser capable of producing a laser beam, said laser beam being conducted through a laser beam delivery assembly capable of focusing said laser beam at said laser drilling station to create an opening in each of said dosage forms; and

(c) a dosage form handling assembly capable of transporting individual dosage forms to said laser drilling station; and

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(d) a quality control assembly located adjacent said dosage form handling assembly capable of sensing said opening in each of said dosage forms and generating a signal in response thereto.

12. The system of claim 11 wherein said quality control assembly comprises a digital camera.

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13. The system of claim 12, further comprising an illumination source capable of providing low angle lighting of said dosage forms.

14. The system of claim 13 wherein said illumination source provides indirect lighting of said dosage forms.

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15. The system of claim 11, further comprising a rejection station located along said dosage form handling system that is capable of ejecting dosage forms from said dosage form handling assembly in response to said signal from said quality control assembly.

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